

Inductive sensor

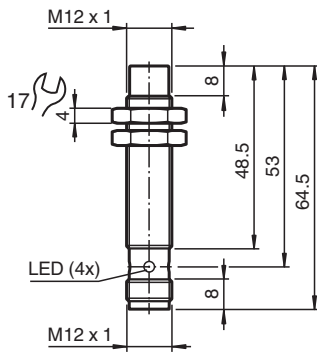
NBN4-12GM50-E3-V1



- 4 mm non-flush
- Extended temperature range
-40 ... +85 °C
- Extended operating voltage range
- Flexible use with versatile mounting opportunities



Dimensions



Technical Data

General specifications

| | | |
|------------------------------|-------|---|
| Switching function | | Normally closed (NC) |
| Output type | | PNP |
| Rated operating distance | s_n | 4 mm |
| Installation | | non-flush |
| Output polarity | | DC |
| Assured operating distance | s_a | 0 ... 3.24 mm |
| Actuating element | | mild steel, e. g. 1.0037, SR235JR (formerly St37-2) 12 mm x 12 mm x 1 mm |
| Reduction factor r_{Al} | | 0.47 |
| Reduction factor r_{Cu} | | 0.43 |
| Reduction factor r_{304} | | 0.85 |
| Reduction factor r_{Brass} | | 0.55 |
| Output type | | 3-wire |

Nominal ratings

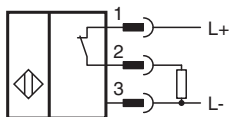
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|-----------------------------|-------|----------------------------|
| Operating voltage | U_B | 6 ... 36 V |
| Switching frequency | f | 0 ... 2650 Hz |
| Hysteresis | H | typ. 5 % |
| Reverse polarity protection | | reverse polarity protected |
| Short-circuit protection | | pulsing |
| Voltage drop | U_d | ≤ 1 V |

Release date: 2025-06-27 Date of issue: 2025-06-27 Filename: 326161-0076_eng.pdf

Technical Data

| | | |
|---|-----------|--|
| Operating current | I_L | 0 ... 200 mA |
| Off-state current | I_r | max. 20 μ A |
| No-load supply current | I_0 | \leq 10 mA |
| Time delay before availability | t_v | \leq 10 ms |
| Switching state indicator | | Multihole-LED, yellow |
| Functional safety related parameters | | |
| MTTF _d | | 1607 a |
| Mission Time (T _M) | | 20 a |
| Diagnostic Coverage (DC) | | 0 % |
| Conformity | | |
| PWIS conformity | | VDMA 24364-A1/B2/C1/T100°C-W |
| Compliance with standards and directives | | |
| Standard conformity | | |
| Standards | | EN IEC 60947-5-2 |
| Approvals and certificates | | |
| Protection class | | II |
| Rated insulation voltage | U_i | 36 V |
| Rated impulse withstand voltage | U_{imp} | 500 V |
| UL approval | | cULus Listed, General Purpose, Class 2 Power Source |
| CCC approval | | CCC approval / marking not required for products rated \leq 36 V |
| Marine approval | | DNVGL TAA00003AK |
| Ambient conditions | | |
| Ambient temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| Storage temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| Mechanical specifications | | |
| Connection type | | Connector plug |
| Housing material | | brass , white bronze coated |
| Sensing face | | PBT , green |
| Degree of protection | | IP65 / IP66 / IP67 / IP68 |
| Connector | | |
| Threading | | M12 x 1 |
| Number of pins | | 3 |
| Mass | | 28 g |
| Dimensions | | |
| Length | | 64.5 mm |
| Diameter | | 12 mm |
| Mounting | | with nuts, M12 |
| Tightening torque | | \leq 10 Nm |
| General information | | |
| Scope of delivery | | 2 self locking nuts in scope of delivery |

Connection Assignment



Connection Assignment

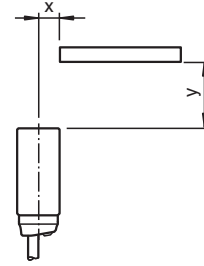
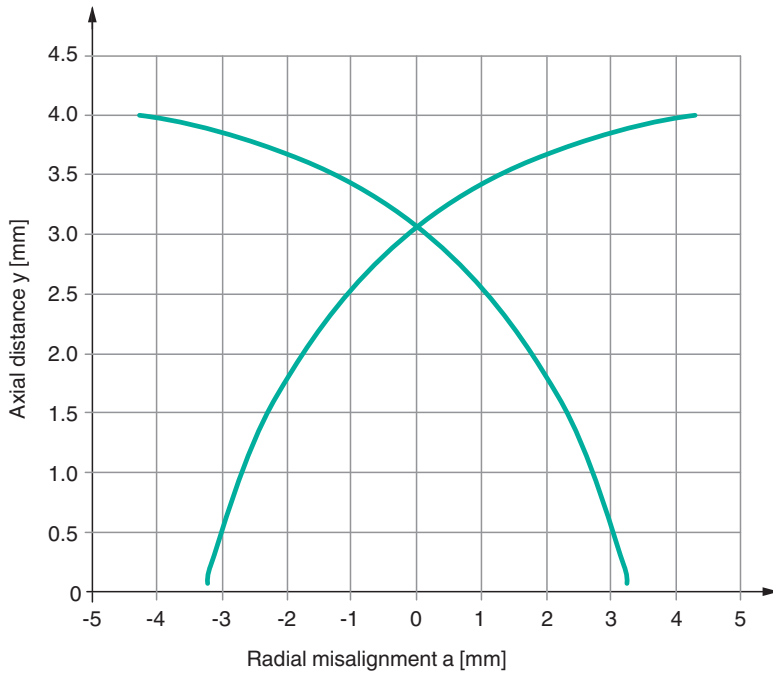


Wire colors in accordance with EN 60947-5-2

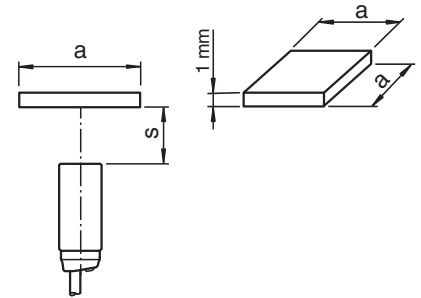
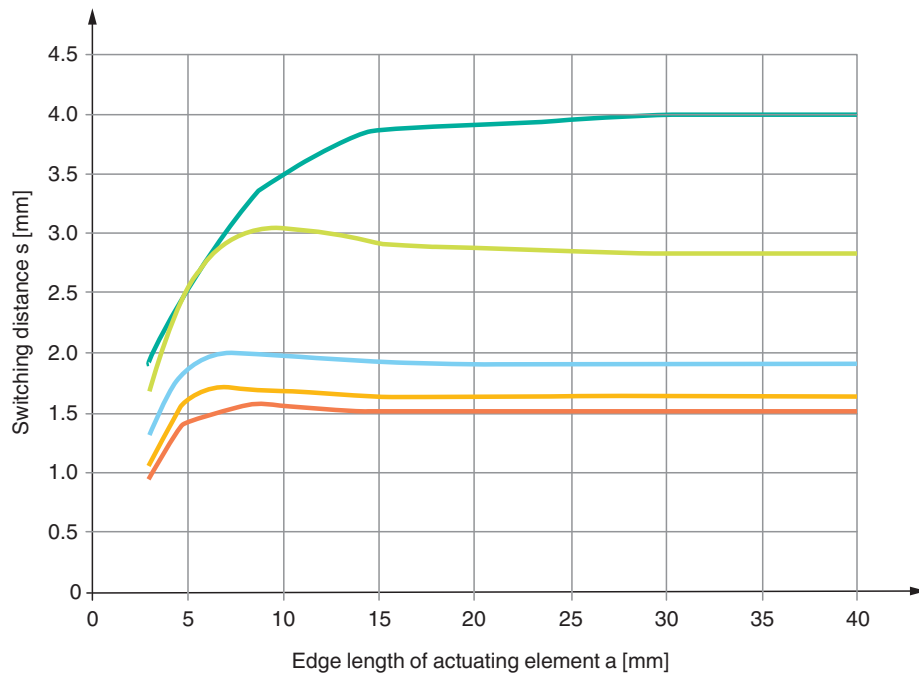
| | | |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue) |
| 4 | BK | (black) |

Characteristic Curve

Actuation by radial approach (standard target)



Switching distance depending on the actuating element



- Steel
- Stainless steel
- Brass
- Aluminum
- Copper

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